DXC Modules

DT1, DT1B

T1 Link Modules

FEATURES

- Two-port T1 interface modules for the DXC family
- Range up to 62 miles with fiber-optic interface
- High speed data rate up to 1.544 Mbps
- Available with copper or fiber-optic interface
- HDSL interface also available (see the *DHL/T1* data sheet)
- Complies with AT&T TR-62411, ANSI T1.403, ITU-T Rec.G.703, G.704, G.921 and G.956 standards
- DT1B module supports BER test on selectable timeslots
- Optional bypass between links on the DT1B module
- Fits into any DXC chassis: DXC-8R, DXC-10A, DXC-30, DXC-STM-1; a special 6U-high version fits into the DXC-30E chassis

DESCRIPTION

- DT1 and DT1B are two-port T1 link modules for use with the modular Digital Cross-Connect units (DXC-8R, DXC-10A, DXC-30, DXC-30E and DXC-STM-1). Each module provides two T1 links over either copper or fiber optic interface. The links support both T1 and fractional T1 rates.
- The DT1, DT1B modules can be ordered with either balanced copper or fiber optic interface.
- A number of fiber optic link options are available, including:
  - 850 nm multimode
  - 1310 nm single mode
  - 1310 nm single mode with laser
  - 1550 nm single mode with laser, providing the maximum range of 55 miles.
- DT1 and DT1B support D4(SF) or ESF framing. Additionally, DT1B supports 1.544 Mbps unframed mode per ITU-T Rec. G.703.
- For longer range applications, copper link modules feature an integral CSU option. When used, it increases the line attenuation up to -36 dB.
- DT1B modules support two types of redundancy:
  - Single-slot/line redundancy (1:1) ensures protective switching within less than 50 ms, between ports on the same module.
  - Y-cable redundancy between modules protects the service from hardware failure. This type of redundancy is supported by the copper interface only.
- Optional port bypass feature ensures continuous traffic support in case of power failure by bypassing port 1 to port 2.
- Two user-programmable timeslot routing modes are available for the module ports:
  - Bidirectional with symmetrical routing
  - Unidirectional with independent control over routing in each direction.
- Setup, control and diagnostics can be performed via a supervisory port using an ASCII terminal or by the RADview SNMP network management system. Control of remote units can be implemented by a dedicated management timeslot in the T1 path.
- DT1 diagnostic capabilities include self-diagnostics upon power-up, analog, remote, network line and payload loopbacks controlled by DXC. DT1B also features BER test on the active timeslots and inband code-activated loopback, specified in ANSI T1E1.2/93-003.

SPECIFICATIONS

- **Number of Ports**
  Two per module
- **Data Rate**
  1.544 Mbps
- **Compliance**
  AT&T TR-62411, ANSI T1.403
  ITU-T Rec.G.703, G.704
- **Framing**
  D4(SF), ESF, Unframed

COPPER INTERFACE

- **Line Code**
  AMI
- **Impedance**
  100Ω, balanced
- **Connectors (per port)**
  RJ-45, 8-pin, for balanced

DT1, DT1B

T1 Link Modules

- **Signal Level**
  Receive:
  0 to -36 dB with CSU
  0 to -10 dB without CSU
  Transmit:
  Nominal level
  ±3V (±10%), balanced
  Levels with CSU
  0 dB, -7.5 dB, -15 dB, -22.5 dB
  Levels without CSU
  Adjustable to be measured at 0 to 655 ft

FIBER OPTIC INTERFACE

- **Operating Wavelength**
  850, 1310 or 1550 nm
  (see *Ordering*)
- **Connectors**
  ST, FC/PC or SC (see *Ordering*)
- **Dynamic Range**
  28 dB for all types of optical interfaces

GENERAL

- **Timeslot Allocation**
  User-defined, any timeslot to any timeslot mapping
- **Timing**
  Receive:
  Derived from a selected data port, can be used as external source for DXC master timing
  Transmit:
  Locked to master DXC timing source
- **Jitter Performance**
  Per AT&T TR-62411
  Meets ETSI TBR 12/13
- **Diagnostics**
  - Local and remote loopbacks on each module port
  - Network line loopback (LLB)
  - Payload loopback (PLB)
  - BER testing (DT1B only)
- **Indicators**
  L LOS Local Port Frame Synchronization Loss
  R LOS Remote Port Frame Synchronization Loss
- **Power Consumption**
  3W at 0.6A
- **Configuration**
  Programmable via DXC management
- **Physical**
  Occupies one DXC-8R/10A/30/30E module slot

Table 1. Power and Transmission Distances

Transmitter Type	Fiber Type	Output Power	Receiver Sensitivity	Maximum Distance
850 nm LED	62.5/125	-18 dBm	-38 dBm	5 km (3 mi)
1310 nm LED	9/125	-18 dBm	-40 dBm	45 km (29 mi)
1310 nm laser	9/125	-12 dBm	-34 dBm	55 km (34 mi)
1550 nm laser	9/125	-12 dBm	-34 dBm	88 km (55 mi)

ORDERING

3U-high module versions:

DXC-M/T1/$
Two-port T1 Link Module

DXC-M/T1B/$/#+
Two-port T1 Link Module with BERT and loopback per timeslot

To order a 6U-high module version for DXC-30E chassis, add **E** after the **DXC-M** prefix of the corresponding option, for example:
DXC-ME/T1/$/#+

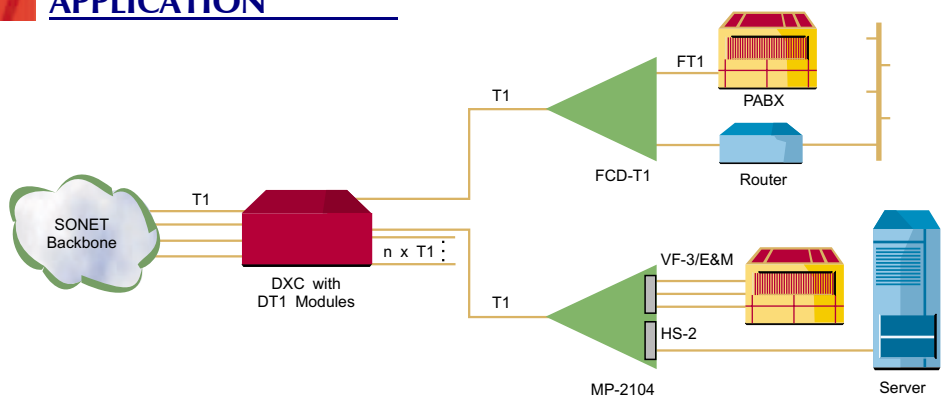
To order HDSL interfaces, refer to the *DHL/T1 data sheet*

$ Specify built-in CSU option
C for CSU option (copper interface only)
BP for port bypass (DT1B only)
BP/C for built-in CSU and optional port bypass (DT1B and copper interface only)

#+ **#** Specify link connectors type:
ST for ST type connectors
FC for FC/PC type connectors
SC for SC type connectors
Default is copper interface with coaxial BNC connectors

+ Specify optical interface wavelength and transmitter type (not relevant with copper interface):
85 for 850 nm, multimode, LED
13 for 1310 nm, single mode, LED
13L for 1310 nm, single mode, laser
15L for 1550 nm, single mode, laser

APPLICATION



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